



# UNITED STATES PATENT AND TRADEMARK OFFICE

*jm*  
UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/047,150	01/14/2002	Armin Schoppach	(Z) 99038 P US	4347
7590 09/08/2004			EXAMINER	
M. Robert Kestenbaum 11011 Bermuda Dunes NE Albuquerque, NM 87111			PRITCHETT, JOSHUA L	
			ART UNIT	PAPER NUMBER
			2872	

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/047,150

Applicant(s)

SCHOPPACH ET AL.

Examiner

Joshua L. Pritchett

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 20-35 is/are pending in the application.
- 4a) Of the above claim(s) 28-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This action is in response to Election submitted July 15, 2004. Claims 20-27 have been elected.

#### ***Election/Restrictions***

Applicant's election of claims 20-27 in the reply filed on July 15, 2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hull (US 6,404,547) in view of Herbst (US 5,663,563).

Regarding claim 20, Hull teaches an optical system with a first optical element (13) having a focal point and a further optical element (14), the first optical element and the second optical element being arranged at a predetermined distance from each other (col. 4 lines 7-9) by means of a mounting (17 and 18). Hull further teaches the mountings (18) comprise compensation elements (17) allowing a change from the predetermined distance between the first optical element and the second optical element (col. 4 lines 41-43). Hull teaches the compensation elements being made of metal (col. 6 lines 49-50). Hull further teaches the movement of the optical element based on temperature dependence (col. 4 lines 20-42). Hull lacks reference to the compensating elements being made from a material so as to displace the first optical element in a same amount of displacement of the focal point occurs because of heating. Herbst teaches the compensating elements being made from a material so as to displace the first optical element in a same amount of displacement of the focal point occurs because of heating (col. 1 lines 54-57). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the compensating elements of Hull be made from a material to perform the function as taught by Herbst for the purpose of the optical system producing an image that is in focus regardless of the ambient temperature.

Regarding claim 21, Hull teaches at least one of the optical elements comprising a lens (11, col. 4 lines 7-9).

Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hull in view of Herbst as applied to claim 20 above, and further in view of Harnisch, B. "Ultra-lightweight C/SiC Mirror and Structures".

Hull in combination with Herbst teaches the invention as claimed but lacks reference to the use of a mounting material with the claimed composition. Harnisch teaches the use of C/C SiC with a density of  $2.23 \times 10^3 \text{ kg/m}^3$  to construct the mounting means of a telescope (page 4 col. 1). Once the Hull mounting means (18) is made of the Harnisch material the compensation elements (17) and the mounting means (18) will inherently have different thermal expansion coefficients because they are made of different materials. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the Hull mounting means made of the Harnisch material for the purpose of allowing the telescope to be lightweight and therefore portable without losing strength in the mountings.

Claims 24, 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hull in view of Herbst and Jutte (US 4,098,476).

Regarding claims 24 and 27, Hull teaches an optical system with a first optical element (13) having a focal point and a further optical element (14), the first optical element and the second optical element being arranged at a predetermined distance from each other (col. 4 lines 7-9) by means of a mounting (17 and 18). Hull further teaches the mountings (18) comprise compensation elements (17) allowing a change from the predetermined distance between the first optical element and the second optical element (col. 4 lines 41-43). Hull teaches the compensation elements being made of metal (col. 6 lines 49-50). Hull further teaches the movement of the optical element based on temperature dependence (col. 4 lines 20-42). Hull lacks reference to the compensating elements being made from a material so as to displace the first optical element in a same amount of displacement of the focal point occurs because of

Art Unit: 2872

heating. Hull further lacks reference to titanium compensation elements. Herbst teaches the compensating elements being made to displace the first optical element in a same amount of displacement of the focal point occurs because of heating (col. 1 lines 54-57). Jutte teaches the use of titanium supports to use thermal expansion to control the position of a mirror (col. 1 lines 62-68). Once the compensating elements of Hull are made from titanium as taught by Jutte the compensating elements and the mounting will inherently have different thermal expansions because they are made from different materials. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the compensating elements of Hull be made from titanium as taught by Jutte to perform the function as taught by Herbst for the purpose of the optical system producing an image that is in focus regardless of the ambient temperature.

Regarding claim 25, Hull teaches at least one of the optical elements comprising a lens (11, col. 4 lines 7-9).

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hull in view of Herbst and Jutte as applied to claim 24 above, and further in view of Harnisch, B. "Ultra-lightweight C/SiC Mirror and Structures".

Hull in combination with Herbst and Jutte teaches the invention as claimed but lacks reference to the use of a mounting material with the claimed composition. Harnisch teaches the use of C/C SiC with a density of  $2.23 \times 10^3 \text{ kg/m}^3$  to construct the mounting means of a telescope (page 4 col. 1). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the Hull mounting means made of the Harnisch material for the

Art Unit: 2872

purpose of allowing the telescope to be lightweight and therefore portable without losing strength in the mountings.

### ***Response to Arguments***

Applicant's arguments in Amendment filed March 17, 2004 were drawn to cancelled claimed. Therefore the arguments drawn to the rejection of claims 4-19 are moot in relation to the newly submitted claims.

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L Pritchett whose telephone number is 571-272-2318. The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2872

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLP *W*

  
**DREW A. DUNN**  
**SUPERVISORY PATENT EXAMINER**